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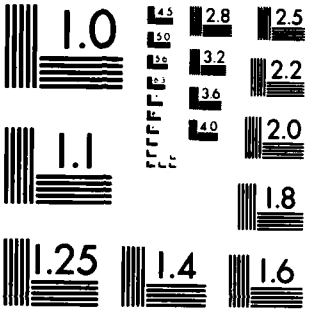

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NAVAL INTELLIGENCE SUPPORT CENTER

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AD A126276

NISC

TRANSLATION

TITLE: EXPERIENCE OF A CHEMICAL SERVICES REPAIR FACILITY

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EXPERIENCE OF A CHEMICAL SERVICES REPAIR FACILITY

[Weber, P.: Erfahrungen einer Instandsetzungseinrichtung der chemischen Dienste; Militaertechnik; June 1980; pp. 304-305; German]

The subject of this report shall be to make accessible the rich experience assembled in past years by other repair facilities and to provide, to users of chemical service equipment to be repaired, hints on questions involved in the use of such equipment without the assistance of a repair unit. /304*

1. Demands on Workshop Personnel

Since the 1960s, troop repairs of special chemical technology, instruments and equipment have been performed in the Belter unit. For us, as a repair facility, the quality and effectiveness of the daily work are primary, just as in the socialist economy.

This requires, for example, that one work against actual time norms and material consumption norms, in order to be able to repair more equipment in the same time and with the same number of workshop personnel, thus reducing the specific consumption of raw materials, spare parts and energy. We see a good precondition for this in the efforts of workshop personnel to perform complaint-free repairs and to solve problems in the repair process. We are aware how difficult it is to break through ideological barriers which still exist to an extent, and to break with habits of many years' standing and norms that have become comfortable.

In our work we do not lose sight of the fact that increasingly more modern equipment is being delivered under the conditions of the revolution in military affairs, and the demands on the knowledge and abilities of our shop personnel are growing. The tasks become more comprehensive and complex and require from each individual that he continuously adapt himself, for the fulfillment of these tasks, with a high sense of responsibility and heightened readiness. It is thus clear: each must learn to deal with time, money, technology, equipment and raw materials in a more efficient fashion, in the insterest of high operational readiness.

2. Competition--the Key to Success

Work competition for high results--the struggle not to remain behind the others but to push ahead with the best--creates a good atmosphere in our collectives. The competition is carried out, on the one hand, between collectives for the state title of "Collective of Socialist Labor," and, on the other hand, within each collective for the title "Best of the Month." Comparisons of performance and exchanges of experience, regular checks, totalling of scores and dissemination of performance data create a lively, active competitive climate. In the process, the work of innovators also plays a significant role. Planned innovative activity produced appliances, tools and test devices, which reduced the time for repair

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*Numbers in right margin indicate pagination in original text.

work. Thus, for example, it was possible to reduce the norms for mid-level repair of the special equipment on the ARS 14 decontamination vehicle by approximately 15% at first, and later by about 35%, and the norms for repair of the EA 65 and DA 66 equipments by about 15%.

3. Reserves are Exploited Through Analyses

In order to achieve economical utilization of assemblies, components, spare parts and materials, systematic analysis is necessary. A prerequisite for this is an exact accounting of consumption. Only thus may inferences be drawn which are necessary for planning and procurement of materiel means. Thus weak points in technology or freqent user errors which lead to failure of specific assemblies and components can be recognized. In addition, analysis can favorably influence the use of those expendibles which are still not always effectively and economically used.

4. In My own Case

In the description which follows, I would like to confine myself to repair of the DA 66 shower unit. The experiences assembled here are generally valid and may also be used as a point of departure for other special chemical equipment to be repaired.

Responsibility for monitoring the DA 66 has been assigned to the TUe [TUe = Technische Ueberwachung = Technical Supervision] of the NVA [Nationale Volksarmee = National People's Army]. Repairs on this equipment must be performed only by one of the TUe-licensed workshops. As prerequisites for such repairs we should note:

--the presence of a repair base that meets all technical and work safety requirements;

--guarantee of a smooth flow of replacement parts;

--removal or inspection of the unit to be repaired by a licensed inspector;

--presence of a stamping procedure for licensed inspectors;

--presence of a workshop instruction for repair of the DA 66;

--completion of the BMSR-related [Betriebsmess-, Steuer- und Regeltechnik = Chief Directorate for Industrial Measuring, Control and Regulating Technology] work by an electrician, who possesses an "E" license;

--presence of a welding engineer for all welding around and in the segmented tube boiler;

--presence of a plan for the division of responsibilities of all specialists taking part in the repair;

--presence of the requisite task group leader and work safety and fire-prevention arrangements.

Permission to conduct repairs is time-limited, granted to specific individuals only, and restricted to the extent proposed in the request. /305

Where do our problems arise? Inspection of the DA 66 in preparation for repair appears to be most complex. Defects and failures in the connections of the BMSR components cannot be located without further effort. Remedies have been developed, because an innovative collective of our unit set itself the goal of developing a test device, with which the time required for inspection could be significantly reduced. As a result of the finished work of the innovators, the PGDA 66 test unit has appeared: this has stood the test and has also met with customer approval in other repair facilities (see Militaer-technik, No. 6, 1978). In addition, a test device to determine the exact performance parameters of the centrifugal pump was developed.

The influence of a repair facility on the use of special chemical technology units of the chemical defense service can be very clearly decumented by the example of the repair of the DA 66. In recent years, in repair of the DA 66, it has developed that about 25% of the units sent for repair were sent with diagnoses of defects which were either not actually present or which were clearly the result of user errors. For example, units were sent for repair with improperly installed, or uninstallable, contact thermometers or with feed-water pumps rusted out. Causes were insufficient knowledge by service personnel, insufficient care and maintenance, or the failure of the contact thermometer adjustment key. In addition, in several units, unauthorized interventions in the BMSR gear were identified.

In evaluation of repairs, it can be determined that the failure level shows a declining tendency. Nevertheless, there are still shortcomings which can be easily avoided through more understanding on the part of the user. Thus, for example, the time schedules for supply and pickup are not observed, the equipment is delivered without service personnel (machinists and drivers), the accompanying documents (boiler log, if available, accompanying note book, and technical status records) are not sent along, the fuel limits for the test runs are too low, an incomplete set of accessories is sent, etc.

Two additional examples, not related to the DA 66, should underscore what has been said so far. A frequent cause of failure of the GSP11 automatic chemical agent detector was a cable burnout resulting from an erroneous polarization of the power supply in the SPW 40 P2CH. In this case, the users and the repair facilities were able to help by introducing irreversible electrical plugs.

The failure rate of the back-pack decontamination device, TEG 57M, was greatly reduced when a complete emptying of the apparatus was conducted after use.

In summary, the following assessments can be made:

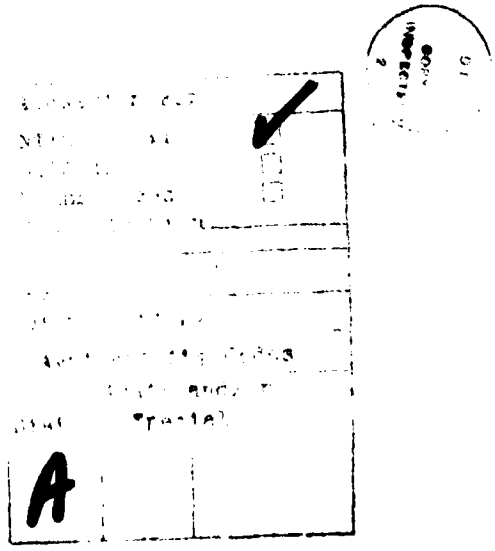
--The effectiveness of the repair process may be influenced directly by the repair personnel, since more economical and technical solutions to repair problems are being sought.

--An exact analysis in repair facilities, and continual generalization of analysis results, leads to a reduction in failure rates, supports the failure-free operation of the repair facility units, and finally leads to an elevation of the operational readiness of units in the chemical services.

--Reducing the failure rates for chemical special equipment and facilities of the chemical services also means improving the knowledge of service personnel

and interdicting unauthorized interventions in the equipment. Further, the following principle must hold true: operation and servicing form an entity: they are to be realized as such in practice.

Preservation work during the repair of built-in special equipment (DA 66).



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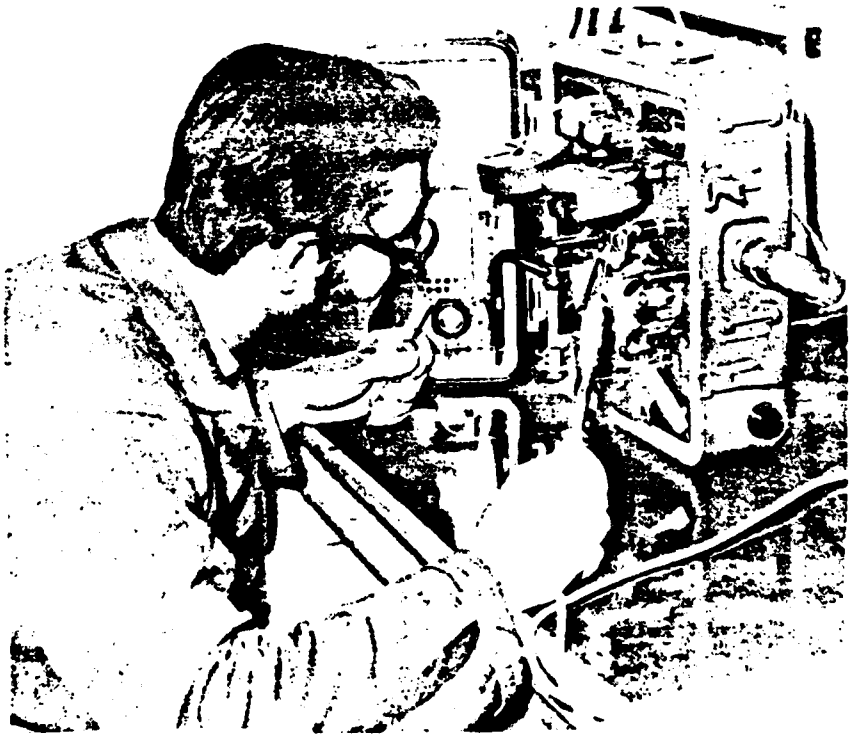
Changing manometer on the
TEG 57M



Carrying out soldering operations on the
GSP 11.

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